1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name: R141b (1,1-Dichloro-1-fluoroethane)
Chemical formula: C₂H₃Cl₂F
Company identification: see heading and/or footer
Emergency phone numbers: see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance.
Components/Impurities: Contains no other components or impurities which will influence the classification of the product.
CAS Nr: 1717-00-6
EC Nr (from EINECS): 404-080-1

3 HAZARDS IDENTIFICATION

Hazard identification: Liquid.
In high concentrations may cause asphyxiation.

4 FIRST AID MEASURES

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Skin/eye contact: For liquid spillage - flush with water for at least 15 minutes
Immediately flush eyes thoroughly with water for at least 15 minutes.
Obtain medical assistance

Ingestion: Rinse mouth with water, do not induce vomiting, call a doctor.

5 FIRE FIGHTING MEASURES

Specific hazards: Exposure to fire may cause containers to rupture/explode.
Non flammable
Hazardous combustion products: If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:
Carbonyl fluoride
Carbon monoxide
Phosgene
Hydrogen chloride
Hydrogen fluoride

Suitable extinguishing media
All known extinguishants can be used.

Specific methods
If possible, stop flow of product.
Move away from the container and cool with water from a protected position.

Special protective equipment for fire fighters
Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions
Evacuate area.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Ensure adequate air ventilation.

Environmental precautions
Try to stop release.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

Clean up methods
Ventilate area.
Absorb excess liquid spillage on inorganic absorbent material such as fine sand, brick dust etc. Place spent absorbent in sealed packages and contact specialist waste disposal contractor.

7 HANDLING AND STORAGE

Handling and storage
Suck back of water into the container must be prevented.
Do not allow backfeed into the container.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Refer to supplier's container handling instructions.
Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection
Ensure adequate ventilation.
Do not smoke while handling product.
Protect eyes, face and skin from liquid splashes.
9 PHYSICAL AND CHEMICAL PROPERTIES

- Molecular weight: 117
- Boiling point: 32 °C
- Relative density, gas: 4.1 (air=1)
- Relative density, liquid: 1.2 (water=1)
- Vapour Pressure 20°C: 0.7 bar
- Solubility mg/l water: 4000 mg/l at 25°C
- Appearance/Colour: Colourless gas
- Odour: Ethereal

Other data: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity: Stable under normal conditions.

Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

May react with aluminium.

11 TOXICOLOGICAL INFORMATION

General: In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

May produce irregular heart beat and nervous symptoms.

12 ECOLOGICAL INFORMATION

General: Covered by the 'Montreal Protocol'.

May have damaging effect on ozone layer.

When discharged in large quantities may contribute to the greenhouse effect.

Ozone depletion factor: 0.11 (R11=1)

Global warming factor: 630 (CO2=1)

13 DISPOSAL CONSIDERATIONS

General: Must not be discharged to atmosphere.

Do not discharge into any place where its accumulation could be dangerous.
14 TRANSPORT INFORMATION

UN Nr
None.

Class
Not applicable

ADR/RID Classification code
Not submitted to ADR.

Labelling ADR
None.

Other transport information
Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting product containers ensure that they are firmly secured and:
- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- there is adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548
Not included in Annex I.

EC Classification
N;R52/53-59

Labelling of cylinders

-Symbols
None.

-Risk phrases
R52/53 Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment.
R59 Dangerous for the ozone layer.

-Safety phrases
S59 Refer to manufacturer/supplier for information on recovery/recycling
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.
Asphyxiant in high concentrations.
Keep container in well ventilated place.
Do not breathe the gas.
The hazard of asphyxiation is often overlooked and must be stressed during operator training. Users of breathing apparatus must be trained.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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